

INTERNATIONAL SEARCH REPORT

International Application No
PCT/JP2004/013281

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01L21/68 H01L21/52 H01L21/78 B23Q11/00 B23D59/00
H05K13/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B23Q B23D H01L H05K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 778 326 A (ALTHOUSE ET AL) 18 October 1988 (1988-10-18) column 3, line 9 - column 7, line 2; figures 1-4	1-16
X	US 4 921 564 A (MOORE ET AL) 1 May 1990 (1990-05-01) column 5, line 23 - column 3, line 12; figures 2,3	1-16
X	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 10, 17 November 2000 (2000-11-17) & JP 2000 195877 A (MATSUSHITA ELECTRIC IND CO LTD), 14 July 2000 (2000-07-14) abstract; figure 2	1-16
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the International filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

22 February 2005

Date of mailing of the international search report

02/03/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Angermeier, D

INTERNATIONAL SEARCH REPORT

International Application No
PCT/JP2004/013281

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PATENT ABSTRACTS OF JAPAN vol. 018, no. 299 (E-1558), 8 June 1994 (1994-06-08) -& JP 06 061347 A (FUJITSU LTD), 4 March 1994 (1994-03-04) abstract; figure 1 -----	1-16
A	PATENT ABSTRACTS OF JAPAN vol. 017, no. 657 (E-1470), 6 December 1993 (1993-12-06) & JP 05 218178 A (FUJITSU LTD), 27 August 1993 (1993-08-27) abstract; figures 4,5 -----	1-16

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP2004/013281

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4778326	A	18-10-1988	JP 1615814 C JP 2041907 B JP 59227195 A	30-08-1991 19-09-1990 20-12-1984
US 4921564	A	01-05-1990	GB 2219135 A , B JP 1822603 C JP 2031441 A	29-11-1989 10-02-1994 01-02-1990
JP 2000195877	A	14-07-2000	NONE	
JP 06061347	A	04-03-1994	NONE	
JP 05218178	A	27-08-1993	NONE	